

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

REC'D 28 FEB 2005

WIPO

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To:
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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

25 FEB 2005

Applicant's or agent's file reference

P-6129-PC

FOR FURTHER ACTION

See paragraph 2 below

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/IL04/00863

19 September 2004 (19.09.2004)

17 September 2003 (17.09.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): H03B 29/00 and US Cl.: 381/71.1

Applicant

SILENTIUM LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

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Alexandria, Virginia 22313-1450

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Le Huyen

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Form PCT/ISA/237 (cover sheet) (January 2004)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/IL04/00863

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL04/00863

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>6, 10-13, 15, 19-29</u>	YES
	Claims <u>1-5, 7-9, 14, 30, 31</u>	NO
Inventive step (IS)	Claims <u>10-13, 15, 19-29</u>	YES
	Claims <u>1-9, 14, 30, 31</u>	NO
Industrial applicability (IA)	Claims <u>1-31</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1-5, 14, 16-18, 30, and 31 lack novelty under PCT Article 33(2) as being anticipated by McLean, US Patent 6,084,971. McLean discloses an active noise attenuation system comprising an acoustic sensor (microphone 30), estimator 37 and acoustic transducer 32. Claims 1 and 18 are met. As to claims 2-5, there is disclosed an error microphone 40. Per claim 14, the estimation function is non linear in time. As to claims 16, 17, 30 and 31, the sensor is a microphone and the acoustic transducer 32 is a speaker.

Claim 6-9 lack an inventive step under PCT Article 33(3) as being obvious over McLean in view of Vaishya, US Patent Publication 2003/0112980 further in view of Feintuch, US Patent 5,117,401. McLean does not disclose a speaker transfer function module and a modulation transfer function module for estimating the noise destructive pattern and noise pattern, respectively. Vaishya discloses a digital filter which models the signal path for noise cancellation, thereby having a modulation transfer function. Feintuch discloses an active noise canceller with a speaker transfer function. It would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Vaishya and Feintuch and include the claimed transfer functions for the purpose of ensuring that the error evaluator determines an accurate residual error measurement. As to claims 7-9, those features are inherent to active noise cancellation.

Claims 10-13, 15, and 19-29 the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a center parameter, radius parameter or intensity parameter as a parameter for minimizing error in the active noise cancellation method. There is also no teaching of a radial basis function or primary estimator to produce a predicted primary signal and a secondary estimator to produce a predicted secondary signal.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL04/00863

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H03B 29/00
US CL : 381/71.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 381/71.1, 381, 71.2, 71.3, 71.4, 71.8, 71.11, 71.12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,084,971 A (MCLEAN) 04 July 2000 (04.07.2000), figure 1, entire specification	1-5, 14, 16-18, 30, 31
Y	US 5,117,401 A (FEINTUCH) 26 May 1992 (26.05.1992), specification	6-9
Y	US 2003/0012980 A1 (VAISHYA) 19 June 2003 (19.06.2003), abstract, figure 1	6-9

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

27 January 2005 (27.01.2005)

Date of mailing of the international search report

25 FEB 2005

Name and mailing address of the ISA/US

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